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REMARKS

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Claims 1-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.
Patent No. 5,311,562 ("Palusamy") in view of U.S. Patent No. 6,122,575 ("Schmidt"). Claim 18
is rejected under 35 U.S.C. 103(a) as being unpatentable over Palusamy in view of Schmidt and
further in view of U.S. Patent No. 6,487,404 ("Kransmo"). Claim 20 is rejected under 35 U.S.C.
103(a) as being unpatentable over Palusamy in view of Schmidt and further in view of U.S.
Patent No. 6,636,842 ("Zambrano").

The specification is amended herein to correct the spelling of "buffer", which was
inadvertently left in its German form "puffer" in each occurrence of the term "ring puffer" and to
correct other grammatical errors. No new matter is added by these corrections. A ring buffer or
circular buffer is known in computer science as a memory area with a read pointer and a write
pointer. Data is written into the buffer starting at the position of the write pointer, which is then
advanced to the top of the new data. When the write pointer reaches the highest buffer address it
starts over at the beginning, overwriting the oldest data in the buffer. The read pointer follows
the write pointer, and they are never allowed to cross.

Claims 2, 6, and 15 are cancelled. Claims 3, 7, 8, 12, 14, and 16 are amended. Thus
claims 1, 3-5, 7-14, and 16-20 are presented for examination.

Response to Rejections under 35 U.S.C 103(a)

Regarding claim 1: Schmidt in col. 2 lines 48-53 does not mention creating archived
error patterns by statistical methods. He simply describes matching a fault pattern in a database,
and retrieving a recommended service procedure. Thus the application of the teaching of
Schmidt to Palusamy still lacks any teaching or suggestion of the claimed limitation of "the
archived error patterns created by statistical methods". Thus, the cited prior art does not support
the rejection under 35 USC 103.

Regarding claim 12: Schmidt in col. 2 lines 48-53 does not mention creating archived
error patterns by statistical methods. He simply describes matching a fault pattern in a database,

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and retrieving a recommended service procedure. A "ring buffer" element is now incorporated into claim 12. See the arguments regarding claim 8 below.

Regarding claim 16: Schmidt in col. 2 lines 48-53 does not mention creating archived error patterns by statistical methods. He simply describes matching a fault pattern in a database, and retrieving a recommended service procedure. The elements of Applicant's claims 3 and 8 are now incorporated into claim 16. See arguments regarding claims 3 and 8 below.

Regarding claim 3: Schmidt in col. 2 lines 48-53 does not mention information compression or statistical methods or data mining methods, as recited in Applicant's claim 3. He simply describes matching a fault pattern in a database, and retrieving a recommended service procedure. Applicant's claim 3 is supported in paragraph [0029]: "The data arising in the run-up of the error (e.g. trends, changes, etc.) will be analyzed using statistical methods and data mining mechanisms to define a minimal but sufficient error pattern."

Regarding claim 7: Palusamy in col. 5 lines 47-53 does not mention minimizing data volume. On the contrary, he describes "parallel" data acquisition 42, 44, which doubles the data volume, rather than minimizing it, thus teaching away from claim 7. In Applicant's paragraph [0062]: "The data to be analyzed by the central evaluation unit 17 can be reduced, since the data to be analyzed are confined to the involved components. This confinement of the data to be analyzed can automatically derived from the plant layout, the plant topology, the hierarchical plant model or the automation hierarchy among others. There is a vertical or local data confinement possible (e.g. only the components are taken into account which feed an assembly line with parts) and there is also a horizontal data confinement possible (e.g. a frequency inverter is connected to a special drive or a pump pumps in three dedicated pipes)." Claim 7 now recites "vertical or horizontal data confinement" to be understood as described in claim 7.

Regarding claim 8: Neither Palusamy nor Schmidt mention a "ring puffer" or "ring buffer" or "circular buffer" or any buffer at all. They mention memory in other capacities, but not this one. A ring buffer is a specific, highly useful data structure for Applicant's invention, because it efficiently buffers the most recent sensed events for analysis and for archiving in the event of a fault and for comparison to archived statistics for a warning of a predicted fault.

Regarding claim 9: Palusamy col. 5 lines 14-22 describes using design criteria on the useful life of components to calculate a remaining useful life of operational components based on

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a demand level. This is not the subject matter of Applicant's claim 9, as supported in Applicant's paragraph [0027]: "the monitored data can be readout of the interfaces of the automation components (automation devices, automation tools, PLC, etc.) automatically."

The remaining dependent claims should be allowed as including the limitations of allowable base claims. Kransmo and Zambrano were not applied by the Examiner to the above-argued claims, and do not affect the above arguments.

Conclusion

For a claim to be obvious under 35 USC 103, any modification to known prior art must also be suggested by the prior art, not by the Applicant's invention; furthermore, such modification must work, and it must produce the Applicant's claimed invention. These criteria are not met by the cited prior art, as argued above. Therefore the Applicant believes this application to be in condition for allowance. Reconsideration and allowance are respectfully requested.

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: ___3/10/06___   By: ___John P. Musone___

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